

REMARKS

Reconsideration and allowance of the subject application in view of the foregoing amendments and the following remarks is respectfully requested.

Claims 1- 20 remain pending in the application. Claims 13, 18 and 20 have been canceled. Claims 21-25 have been added.

Claim 1 has been objected to because of incorrect spelling. In response claim 1 has been amended in accordance with the Examiner's helpful suggestion and the objection should be withdrawn.

Claims 3 to 8 are objected to for lack of antecedent basis. The claims have been amended to address the Examiner's objections and in view of the same, reconsideration and withdrawal of the objections is respectfully requested.

Claims 12, 13 and 20 are rejected under 35 USC §112 as being indefinite. Claim 12 has been amended to reflect the unit of measure. Claims 13 and 20 are rejected under 35 USC §101 because the claimed recitation of a use, without setting for the any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 USC §101. In response, original claims 13 and 20 have been canceled.

Claims 13 and 20 are rejected under 35 USC §102(b) as being anticipated by Everett (US Patent No. 5,294,327). As original claims 13 and 20 have been canceled, this rejection is now moot and the rejection should be withdrawn.

Claims 1-3, 9, 14, 17 and 19 are rejected as being unpatentable under 35 USC §103 in view of Hantzer. Applicants respectfully traverse this rejection.

In the Office Action, the Examiner relies upon various portions of Hantzer (US 2003/0062292) for finding support for the four steps recited in the presently pending claim 1. More particularly, the Examiner relies upon (a) paragraph 27 of page 3 of Hantzer for the purported disclosure of the first step of claim 1; (b) paragraph 27 of page 3 of Hantzer for the purported disclosure of the second step of claim 1; (c) example 3 of Hantzer for the purported disclosure of the third step of claim 1; and 9d) paragraph 13 of page 2 of Hantzer for the purported disclosure of the fourth step of claim 1.

As it can be noticed from paragraph 13 of Hantzer, the process broadly comprises the following stages:

- (a) a first stage wherein a first hydro treatment reaction is performed;
- (b) a second stage wherein a second hydro treatment reaction is performed;
- (c) a third stage wherein a hydrogen sulfide removal reaction is performed; and
- (d) a fourth stage wherein a hydrogenation reaction is performed.

It is respectfully submitted that the contents of paragraph 27 disclose the reaction conditions that should be maintained during the second stage wherein the second hydro treatment reaction is performed, which include heating the first stage reaction product to a temperature in the range of 150 to 500°C, adding treat gas containing hydrogen at a pressure in the range of 35.49 Bar to 207.86 Bar (as 100kPa = 1 Bar). Thus, it can be clearly noticed that the pressure range disclosed in paragraph 27 is entirely non-overlapping as compared to the pressure range disclosed in the present application. The

same difference has also been acknowledged by the Examiner.

In addition to the above, it is respectfully submitted that the second stage itself (wherein the second hydro treatment reaction is performed) is carried out in the presence of a catalyst, which is described in detail in paragraphs 21 to 26. The Examiner would notice that the catalyst used in the second stage is not a nickel based catalyst.

The Examiner contends that paragraph 27 teaches adding stoichiometric hydrogen to the naphtha range petroleum feed. It is respectfully submitted that it is no where disclosed in Hantzer that stoichiometric quantity of hydrogen is added in the second stage. In fact, the quantity of hydrogen added in the second stage cannot be the stoichiometric quantity because prior to the second stage and more particularly, in the first stage treat gas comprising hydrogen has been added to the feed and more particularly, treat gas has been added at rates from 1000 to 5000 scf/B in the first stage (please refer to paragraph 20).

Now referring to Example 3, it is respectfully submitted that the example discloses the reaction conditions that should be maintained during the third and the fourth stages and not the second stage. In other words, Example 3 discloses the reaction conditions that should be maintained during the third stage where a hydrogen sulfide removal reaction is performed and during the fourth stage wherein a hydrogenation reaction is performed. If we look into the teachings paragraph 31, it can be noticed that the reaction conditions that should be maintained during the fourth stage include temperature in the range of 150 to 300°C and pressure in the range of 69.96 to 207.86 Bar and the reactions are not performed in presence of hydrogen.

Additionally, each of the third stage and the fourth stage is carried out in presence of catalyst which is not only distinct from each other but also distinct from the catalyst used in stage 2. The catalyst used in the third stage is described in detail in paragraph 28 and the catalyst used in stage 4 is described in detail in paragraph 31.

Contrary to Hantzer, the present invention involves only one reaction stage. The four steps disclosed in claim 1 constitute a single reaction stage. The above difference is evident from the fact that the inventors have used only one catalyst for performing the entire process. Additionally, the entire process according to the present invention is carried out under a single temperature and a single pressure value range.

As regards paragraph 36, which the Examiner relies upon to indicate that the process of Hantzer is operable over a range of conditions consistent with the intended objectives, it is respectfully submitted that Hantzer has clearly provided the entire range of the operating conditions within which he anticipates his process to be operable. Paragraph 36 can be merely constructed to mean that within the range of the operating conditions provided, it is possible to modify the operating conditions to suite the intended objectives. Paragraph 36 cannot be construed to mean that the process described by Hantzer is operable outside the range of the operating conditions described therein.

Hantzer has compared his operating conditions with the conventional hydroprocessing technology and claims that the operating conditions adopted by him significantly milder as compared to the conventional hydroprocessing technology (which are conducted under much severe conditions). However, once again even this statement does not suggest that the process described in Hantzer is performable outside the

claims/described range. It is respectfully submitted that according to paragraph 27 of page 3 of Hantzer, the temperature is preferably in the range of 250 to 400°C and the pressure is preferably in the range of 69.96 to 138.91 Bar. As it can be noticed, the preferably operating conditions that are described in the present invention are almost half as severe as the operating conditions described in Hantzer.

Finally, Applicants submit that in the Office Action, the catalyst used in stage 2, according to Hantzer should be used in stage 4. As it can be noticed, according to Hantzer, only the catalyst used in stage 4 is nickel based catalyst. The catalyst that is used in stage 4 of Hantzer cannot be used in the second stage as the reactions that are being performed the two stages are entirely different. The catalyst used in stage 4 is a hydrogenation catalyst, while the catalyst used in stage 2 is a hydro treatment catalyst. Thus, claim 1 is not obvious in view of Hantzer and the obviousness rejection should be withdrawn.

Claims 2, 3, 9, 14, 17 and 19 are dependent upon a base claim (claim 1) and are not obvious in view of Hantzer for the reasons discussed above with respect to claim 1, as well as on their own merits. Accordingly, the obviousness rejection should be withdrawn.

Claims 10-12, 15 and 18 are rejected as being unpatentable under 35 USC §103(a) over Hantzer in view of Cody et al. Applicants respectfully traverse this rejection.

Cody does not overcome the deficiencies discussed above with respect to Hantzer. Claims 10, 12, 15 and 18 are directly or indirectly dependent upon claim 1 and recite additional, important limitations and should be patentable for the reasons discussed above with respect to claim 1 as well as on their own merits. Accordingly, the obviousness

rejection should be withdrawn.

Claims 4-8 and 16 are rejected as being unpatentable under 35 USC §103(a) over Hantzer in view of Everett. Applicants respectfully traverse this rejection.

Everett does not overcome the deficiencies discussed above with respect to Hantzer. Claims 4-8 and 16 are directly or indirectly dependent upon claim 1 and recite additional, important limitations and should be patentable for the reasons discussed above with respect to claim 1 as well as on their own merits. Accordingly, the obviousness rejection should be withdrawn.

All objections and rejections having been addressed, it is respectfully submitted that the present application should be in condition for allowance and a Notice to that effect is earnestly solicited.

Early issuance of a Notice of Allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in cursive script that reads "Kenneth M. Berner".

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